

y family and I were hiking a remote trail in the Bitterroot National Forest one summer day when a large hawk swooped past us and began to scold. Squawking relentlessly, it flew back and forth above our heads in a blur of feathers, clearly ready to take on four humans and a dog.

As we ducked and hurried up the switch-backs, the agitated bird landed on a fir tree and continued its rant. We were obviously unwelcome, having walked too close to the nest of a northern goshawk.

### Identification

The northern goshawk is a big, heavy-bodied raptor with relatively short, broad wings, a pale underside, and a showy white ruffle of undertail feathers (called "coverts") plainly visible when it flies overhead. An adult is blue-gray on top with a slate-gray cap, bold white eyebrows, and bright red eyes that seem to glow. Underneath, it is light gray to white with delicate dark-gray barring and a long, heavily banded tail.

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Immature goshawks have brown backs, light undersides that are heavily streaked with brown, less noticeable eyebrow stripes, and yellow eyes.

The northern goshawk is one of North America's largest hawks. "Gos" is an Old English word for "goose," referring to the raptor's ability to take down large waterfowl.

## **Voice**

When humans or other intruders come too close to the nest, a parent will often sound a sharp, repetitive *kak-kak-kak-kak-kak-kak* alarm. Females and juveniles also use a "waillike" begging call to solicit food deliveries from the male during nesting.

### Reproduction

Goshawks usually return to the same nesting area each year, but a pair may rotate among a handful of alternate nests. In Montana, goshawks begin nest building and egg laying from early April to late May. The female lays two to four eggs in a nest of sturdy twigs lined with greenery. While she incubates the eggs, the male hunts. After about a month, the eggs start to hatch, and five or six weeks later the well-feathered offspring fledge. By late summer, young goshawks are skillful fliers ready to strike out on their own.

## Habitat

Northern goshawks live in dense woods throughout much of northern North America, Europe, and Asia. In Montana, they are found across the state except in the far northeast. For nesting, they prefer mature forests with plenty of big trees, a closed canopy of limbs overhead, and a fairly open understory where they can exercise their hunting skills.

U.S. Forest Service biologist Dave Lockman has studied roughly 100 goshawk nests in the Bitterroot National Forest. He finds the raptors primarily in mature

stands of Douglas fir mixed with other tree species, usually on the northern and eastern sides of mid-elevation slopes, and often in some kind of bowl or depression near a small stream or pond. But goshawks also nest among ponderosa pines and on south-facing slopes. Elsewhere they have been found nesting in small- to medium-sized lodgepole pines.

In winter, these year-round residents move to lower elevations of Montana, where they hunt in open country near streams.

#### Hunting

Goshawks eat squirrels and snowshoe hares as well as birds such as jays, robins, woodpeckers, crows, and mountain grouse. To hunt, the goshawk perches quietly on a branch, waiting for a likely prospect to scurry, hop, or flitter through its field of view. Once the goshawk locates prey, it pursues fiercely by swerving through trees, smashing through brush, and even following on foot if necessary.

## **Aerial maneuvers**

The goshawk impresses scientists (and terrifies prey) with its amazing ability to zip through dense forests. During its dizzying flight, the goshawk maneuvers its wings, tail, and legs to turn, dip, slow, accelerate, duck, and claw its way through small gaps among trunks and branches. The bird's aerial skills have attracted the attention of a research team from Harvard University and MIT, where biologists and roboticists are studying its flight in the hopes of designing faster, more efficient drones.

# **Conservation status**

Surveying for nesting goshawks is "like finding a needle in a haystack in our mountain forests," says Jack Kirkley, goshawk research scientist and professor at the University of Montana-Western. As a result, it's hard to tell exactly how the species is faring in Montana. Some scientists and conservationists believe goshawks are vulnerable because of their preference for mature forests, which can be lost to timber harvest or overly hot wildfires. Others believe that the bird is doing fine here.